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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER


FOWLKES, ANDRE R

ART UNIT	PAPER NUMBER
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2122

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/047,769	Applicant(s) KLAVE ET AL. 	
	Examiner Andre R. Fowlkes	Art Unit 2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/15/04, 4/20/02</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-43 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Deo et al., (Deo), U.S. Patent No. 6,226,665.

As per claim 1, Deo discloses an **embedded system configured to reduce volatile memory usage by loading individual software components**, (col. 2:46-64, "a method is defined for executing a software application on a system having a processor so as to minimize a RAM capacity required while the processor executes the software application. The method includes the step of providing application code that is divided into specific software components. The software components include variables and an event handler. A first portion (comprising a group of software components from a loading table) of the variables and the event handler for the software application are loaded (using a loader application) from a storage memory (i.e. non-volatile memory)

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that is not used for execution of the application, into a RAM of the system and are executed from the RAM using the processor. Any change in a state of the system and any new event is detected by the processor while it executes the software components loaded into the RAM. In response to either a change in the state of the system or a new event, another software component is loaded into the RAM for execution by the processor, replacing at least one of the software components previously loaded. These steps repeat until execution of the software application is terminated”), **the embedded system comprising:**

- **non-volatile memory including:**

- **an operating system, a loader application, loading table, a plurality of individual software components** (col. 2:46-64, “a method is defined for executing a software application on a system having a processor so as to minimize a RAM capacity required while the processor executes the software application. The method includes the step of providing application code that is divided into specific software components. The software components include variables and an event handler. A first portion (comprising a group of software components from a loading table) of the variables and the event handler for the software application are loaded (using a loader application) from a storage memory (i.e. non-volatile memory) that is not used for execution of the application, into a RAM of the system and are executed from the RAM using the processor. Any change in a state of the system and any new event is detected by the processor while it executes the software components loaded into the RAM. In response to either a change in the state of the system or a new event, another software

component is loaded into the RAM for execution by the processor, replacing at least one of the software components previously loaded. These steps repeat until execution of the software application is terminated”),

- instructions stored in the non-volatile memory that are executable by the processor for implementing a method comprising:

- loading the operating system for the embedded system into the volatile memory (col. 2:53-58, “A first portion of the variables and the event handler (i.e. operating system) for the software application are loaded (using a loader application) from a storage memory (i.e. non-volatile memory) that is not used for execution of the application, into a RAM (i.e. volatile memory) of the system”),

- starting the operating system, loading the loader application into the volatile memory, starting the loader application, examining the loading table to determine which of the individual software components are to be loaded into the volatile memory (col. 2:46-64, “a method is defined for executing a software application on a system having a processor so as to minimize a RAM capacity required while the processor executes the software application. The method includes the step of providing application code that is divided into specific software components. The software components include variables and an event handler. A first portion (comprising a group of software components from a loading table) of the variables and the event handler for the software application are loaded (using a loader application) from a storage memory (i.e. non-volatile memory) that is not used for execution of the application, into a RAM of the system and are executed from the RAM using the

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processor. Any change in a state of the system and any new event is detected by the processor while it executes the software components loaded into the RAM. In response to either a change in the state of the system or a new event, another software component is loaded into the RAM for execution by the processor, replacing at least one of the software components previously loaded. These steps repeat until execution of the software application is terminated”),

- **loading each of the individual software components that are to be loaded as indicated in the loading table into the volatile memory** (col. 2:53-58, “A first portion of the variables and the event handler (i.e. operating system) for the software application are loaded (using a loader application) from a storage memory (i.e. non-volatile memory) that is not used for execution of the application, into a RAM (i.e. volatile memory) of the system”),

As per claim 2, the rejection of claim 1 is incorporated, and further Deo discloses that **the embedded system is a multi-functional peripheral** (col. 4:9-16, “A preferred form of the present invention is embodied in a combination pager and data management device, which is referred to herein by the project name “Nomad.” However, it is contemplated that the present invention can also be practiced using other readily portable electronic devices having a limited memory and resources for executing application software. For example, a combination cellular phone and data management device”).

As per claim 3, the rejection of claim 1 is incorporated, and further Deo discloses that **the loading table is configurable by a user** (col. 4:28-36, "Nomad includes a housing 32 and has a user interface that includes a keypad 36 disposed on the top of housing and having four buttons that are used to control the display and the functions performed by Nomad in connection with its conventional paging function and its PIM data management functions. The buttons comprise an Action button 42, a Back button 44, an Up button 38, and a Down button 40. The buttons navigate the user through a directory/menu hierarchy").

As per claim 4, the rejection of claim 3 is incorporated, and further Deo discloses **an input component in electronic communication with the processor for a user to enter user input and thereby configure the loading table** (col. 4:28-36, "Nomad includes a housing 32 and has a user interface that includes a keypad 36 disposed on the top of housing and having four buttons that are used to control the display and the functions performed by Nomad in connection with its conventional paging function and its PIM data management functions. The buttons comprise an Action button 42, a Back button 44, an Up button 38, and a Down button 40. The buttons navigate the user through a directory/menu hierarchy").

As per claim 5, the rejection of claim 4 is incorporated, and further Deo discloses **a display in electronic communication with the processor that displays information to the user relating to the loading table** (col. 4:28-36, "Nomad includes

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a housing 32 and has a user interface that includes a keypad 36 disposed on the top of housing and having four buttons that are used to control the display and the functions performed by Nomad in connection with its conventional paging function and its PIM data management functions. The buttons comprise an Action button 42, a Back button 44, an Up button 38, and a Down button 40. The buttons navigate the user through a directory/menu hierarchy”).

As per claim 6, the rejection of claim 5 is incorporated, and further Deo discloses **a menu structure that may be navigated by a user using the input component and the display to configure the loading table** (col. 4:28-36, “Nomad includes a housing 32 and has a user interface that includes a keypad 36 disposed on the top of housing and having four buttons that are used to control the display and the functions performed by Nomad in connection with its conventional paging function and its PIM data management functions. The buttons comprise an Action button 42, a Back button 44, an Up button 38, and a Down button 40. The buttons navigate the user through a directory/menu hierarchy”).

As per claim 7, the rejection of claim 6 is incorporated, and further Deo discloses that **the loading table is directly configurable by a user** (col. 4:28-36, “Nomad includes a housing 32 and has a user interface that includes a keypad 36 disposed on the top of housing and having four buttons that are used to control the display and the functions performed by Nomad in connection with its conventional paging function and

its PIM data management functions. The buttons comprise an Action button 42, a Back button 44, an Up button 38, and a Down button 40. The buttons navigate the user through a directory/menu hierarchy”).

As per claim 8, the rejection of claim 6 is incorporated, and further Deo discloses that **the loading table is indirectly configurable by a user** (col. 2:59-61, “In response to either a change in the state of the system or a new event (indirectly caused by a user loaded application), another software component is loaded into the RAM”).

As per claim 11, the rejection of claim 1 is incorporated, and further Deo discloses that **the volatile memory is RAM** (col. 2:48, “RAM”).

As per claim 12, the rejection of claim 1 is incorporated, and further Deo discloses that **the individual software components are software libraries** (col. 2:51, “software components (i.e. software libraries)”).

As per claim 13, the rejection of claim 1 is incorporated, and further Deo discloses **a communications module in electronic communication with the processor for communications with a computer** (col. 13:46-48, “Also coupled to the object maker is a network interface 266, which provides communication to other computers (via the web)”), **and a web interface accessible by a user through use of a web browser to configure the loading table** (col. 13:46-48, “Also coupled to the

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object maker is a network interface 266, which provides communication to other computers (via the web)").

As per claim 14, the rejection of claim 13 is incorporated, and further Deo discloses that **the web interface comprises a web page** (col. 13:46-48, "Also coupled to the object maker is a network interface 266, which provides communication to other computers (via the web)").

As per claim 15, the rejection of claim 1 is incorporated, and further Deo discloses **examining hardware configuration by the loader application and modifying the loading table based on the hardware configuration** (col. 13:55-65, "By executing an applet, the basic functionality of Nomad (or any other small portable device in which the present invention is embodied) can be substantially altered and thus expanded. Accordingly, the useful life of the device is extended by providing appropriate applets to enhance its functional capabilities. For example, if embodied in a cell phone that when originally sold, did not include the ability to provide caller identification (ID), an appropriate applet executed by a processor in the cell phone could provide that additional caller ID functionality").

As per claims 16-22 and 25-29, this is a computer readable medium version of the claimed system discussed above, in claims 1-4, 6-8 and 11-15, wherein all claimed limitations have also been addressed and/or cited as set forth above. For example, see

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Deos application execution environment for a small device with partial program loading (col. 2:45-3:50).

As per claims 30-36 and 39-43, this is a method version of the claimed system discussed above, in claims 1-4, 6-8 and 11-15, wherein all claimed limitations have also been addressed and/or cited as set forth above. For example, see Deos application execution environment for a small device with partial program loading (col. 2:45-3:50).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9, 10, 23, 24, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deo et al., (Deo), U.S. Patent No. 6,226,665 in view of Buxton et al., (Buxton), U.S. Patent No. 5,970,252.

As per claim 9, the rejection of claim 1 is incorporated, and further Deo doesn't explicitly disclose that **the loading table is a license table comprising a list of licenses relating to the individual software components.**

However, Buxton, in an analogous environment, discloses that **the loading table is a license table comprising a list of licenses relating to the individual software components** (col. 18:1-3, "If a component's certification is not on the list, it is assumed that the component is unlicensed and therefore is not loaded and its use is unauthorized").

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teachings of Buxton into the system of Deo to have **the loading table is a license table comprising a list of licenses relating to the individual software components**. The modification would have been obvious because one of ordinary skill in the art would have wanted to ensure that the component is properly licensed and is used within the terms and conditions (Buxton 17:18-47).

As per claim 10, the rejection of claim 9 is incorporated, and further Deo doesn't explicitly disclose that **the individual software components with licenses, as indicated by the license table, are loaded into the volatile memory**.

However, Buxton, in an analogous environment, discloses that **the individual software components with licenses, as indicated by the license table, are loaded into the volatile memory** (col. 18:1-3, "If a component's certification is not on the list, it is assumed that the component is unlicensed and therefore is not loaded and its use is unauthorized, (software components with licenses are loaded into the volatile memory)").

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teachings of Buxton into the system of Deo to have **the individual software components with licenses, as indicated by the license table, are loaded into the volatile memory.** The modification would have been obvious because one of ordinary skill in the art would have wanted to ensure that the component is properly licensed and is used within the terms and conditions (Buxton 17:18-47).

As per claims 23, 24, 37 and 38, the Deo/Buxton combination also discloses such claimed limitations as addressed in claims 9-10 above, respectively.

Conclusion


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre R. Fowlkes whose telephone number is (571) 272-3697. The examiner can normally be reached on Monday - Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571)272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ARF



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SUPERVISORY PATENT EXAMINER